

AON SPRINKLER CERTIFICATION



Aon New Zealand

Aon Sprinkler Certification
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Aon Sprinkler Certification Technical Note		
Note Number: TN20-46	Issue: 1	Date: 21 September 2020
Subject	Pipe attachments to fire water tanks	
Notice: Aon Sprinkler Certification Technical Notes provide guidance notes which may be used in certification of sprinkler installations by Aon New Zealand. If sprinkler installations are being certified by any other Sprinkler System Certifier, these Technical Notes may not apply.		

It has come to our notice that some contractors are failing to consider the loading being imposed by the piped connections to the shell and roof of fire water tanks. It is possible for the tank design engineer to account for such loadings. However, when reviewing the supporting documentation for the tank in many cases there is no evidence that the loads from the connecting pipes have been allowed for by the tank design engineer.

Inadequately supported pipe has the potential to cause premature failure of the tank. Failure could be:-

- damage to the corrosion protection of the tank materials
- deformation of the tank shell or roof
- compromised seal between the tank liner and the tank shell
- premature failure during an earthquake
- voiding of manufacturer warranty

Inadequately supported pipe connections to and from the tank may also be subject to significant movement under high flow conditions, with the potential for catastrophic pipe work connection failure with resultant significant danger to life and property.

Unless the tank design engineer has accounted for the gravity and seismic loads imposed by the connecting pipes, the whole length of the pipe work requires to be supported and braced independently to comply with clauses 403.9 and 403.12 of NZS4541:2013, or 4.3.9 and 4.3.12 of NZS4541:2020 as appropriate.

Consideration needs to be given to carrying the pipe load independently of the tank to the ground. Consideration could also be given to locating all tank connections at low level.

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A handwritten signature in blue ink, appearing to read "Stephen Ridder".

Stephen Ridder
Fire Protection Consultant



Figure 1 – Lack of independent support and bracing.